

RESPIRATORY SYSTEM

1. A man's intrapleural pressure is being measured. In what phase did he hold his breath, if his pressure is 7,5 cm Hg?

- A. Forced inspiration
- B. Quiet inspiration
- C. Quiet expiration
- D. *Forced expiration**
- E. Respiration

2. Intrapleural pressure is being measured in a person. In what phase has a person held his breath if the pressure is - 25 cm H₂O?

- A.*Speed up inspiration**
- B.Calm expiration
- C.Calm inspiration
- D.Speed up expiration
- E.-

3. A man took a quiet expiration. Name an air volume that is meanwhile contained in his lungs:

- A. Residual volume
- B. Vital lung capacity
- C.*Functional residual capacity**
- D. Expiratory reserve volume
- E. Respiratory volume

5. A doctor recorded in the medical history that a patient had hypopnoea (decreased respiration depth). This means that the following characteristic of the external respiration is reduced:

- A. Vital lung capacity
- B. *Respiratory volume**
- C. Respiratory minute volume
- D. Expiration capacity
- E. Functional residual capacity

6. Lung ventilation in a person is increased as a result of physical activity. Which of the following indexes of the external respiration is much higher than in a state of rest?

- A. *Respiratory volume**
- B. Inspiratory reserve volume
- C. Total lung capacity
- D. Expiratory reserve volume
- E. Vital capacity of lungs

7. A child asked you to puff up the balloon as much as possible for a one exhalation. What air volume do you use?

- A.*Vital volume of the lungs**
- B. Inspiration volume
- C. Functional residual volume
- D.Total volume of the lungs
- E.Backup volume of the inspiration

8. During training session in the laboratory the students were performing spirometry on themselves. What indicator cannot be measured with this method?

- A. Respiratory minute volume
- B. Maximal breathing capacity

- C. ***Functional residual capacity**
- D. Respiration rate
- E. Vital capacity

9. A patient has a traumatic injury of sternocleidomastoid muscle. This has resulted in a decrease in the following value:

- A. ***Inspiratory reserve volume**
- B. Expiratory reserve volume
- C. Respiratory volume
- D. Functional residual capacity
- E. Residual volume

10. A doctor asked a patient to make deep exhalation after a normal inhalation. What muscles contract during such exhalation?

- A. ***Abdominal muscles**
- B. Trapezius muscles
- C. External intercostal muscles
- D. Diaphragm
- E. Pectoral muscles

11. When studying the signs of pulmonary ventilation, reduction of forced expiratory volume has been detected. What is the likely cause of this phenomenon?

- A. Increase of functional lung capacity
- B. ***Obstructive pulmonary disease**
- C. Increase of respiratory volume
- D. Increase of pulmonary residual volume
- E. Increase of inspiratory reserve volume

12. Lungs of a preterm infant have areas of atelectasis (pulmonary collapse). The main cause is:

- A. ***Surfactant deficiency**
- B. Increased viscous resistance
- C. Underdeveloped inspiration muscles
- D. Diminished force of surface tension of lungs
- E. Surfactant excess

13. A patient demonstrates sharp decrease of pulmonary surfactant activity. This condition can result in:

- A. Decreased work of expiratory muscles
- B. Increased pulmonary ventilation
- C. ***Alveolar tendency to recede**
- D. Decreased airways resistance
- E. Hyperoxemia

14. X-ray examination discovered lungs emphysema in the patient. What is the reason of short breath development in this case?

- A. ***Decreased lungs elasticity**
- B. Increased lungs elasticity
- C. Inhibition of respiratory center
- D. Excitation of respiratory center
- E. Decreasing of alveoli receptors sensitivity

15. A patient has increased thickness of alveolar-capillary membrane caused by a pathological process. The direct consequence will be reduction of the following value:

- A. Respiratory minute volume
- B. Oxygen capacity of blood
- C. Expiratory reserve volume
- D. * Diffusing lung capacity**
- E. Alveolar ventilation of lungs

16. A patient has the oxyhemoglobin dissociation curve shifted to the left. What blood changes induce this condition?

- A.
- B. *Alkalosis, hypocapnia, temperature drop**
- C. Acidosis, hypercapnia. Temperature rise
- D. Acidosis, hypercapnia, temperature drop
- E. Acidosis, hypercapnia, temperature rise

17. Electrical activity of neurons is being measured. They fire prior to and at the beginning of inhalation. Where are these neurons situated?

- A. *Medulla oblongata**
- A. Diencephalon
- B. Cerebral cortex
- C. Mesencephalon
- D. Spinal cord

18. A patient with a craniocerebral trauma has respiratory standstill. What part of cerebrum is likely to be damaged?

- A. *Medulla oblongata**
- B. Telencephalon
- A. Mesencephalon
- B. Thalamencephalon
- C. Cerebellum

19. A 35 year old man got an injury that caused complete disruption of spinal cord at the level of cervical segment. What respiration changes will be observed?

- A. Thoracic respiration will be maintained, diaphragmal will disappear
- B. *It will come to standstill**
- C. It will become infrequent and deep
- D. No changes will be observed
- E. Diaphragmal respiration will be maintained, thoracic will disappear

20. A patient has a transverse disruption of spinal cord below the IV thoracic segment. What changes in respiration will it cause

- A. *Respiration will stay unchanged**
- B. Respiration will stop
- C. Respiration will become more frequent
- D. Respiration will become deeper
- E. Respiration will become less frequent

21. Vagus nerves of an experimental animal have been cut on the both sides. What respiratory changes will result from this?

- A There will no be respiratory changes
- B. *Respiration will become deep and infrequent**
- C. Respiration will become shallow and infrequent
- D. Respiration will become shallow and frequent
- E. Respiration will become deep and frequent

22. A young woman who entered a production department where is strongly smelt of paints and varn had a bronchospasm. This reflex was caused by irritation of the following receptors:

- A. Central chemoreceptors
- B. Peripheral chemoreceptors
- C. Pleura receptors
- D. *Irritant**
- E. Juxtaglomerular

23. Voluntary breath-holding caused increase of respiration depth and frequency. The main fa stimulating these changes of external respiration is:

- A. *Increased tension of CO₂ in blood**
- B. Decreased tension of O₂ in blood
- C. Decreased concentration of O₂ in blood
- D. Increased tension of O₂ in blood
- E. Decreased tension of CO₂ in blood

24. During ascent into mountains a person develops increased respiration rate and rapid heart rate. What is the cause of these changes?

- A. Decrease of O₂ partial pressure
- B. Increase of blood pH
- C. Increase of nitrogen content in air
- D. *Increase of CO₂ partial pressure**
- E. Increase of air humidity

25. When water affects mucous membrane of the inferior nasal meatuses, this causes "diver reflex" that provokes:

- A.*Reflexory apnea**
- B.Reflectrory dyspnea
- C.Reflectory hyperpnea
- D.Cough
- E.Bronchospasm

Spasm of smooth muscle of bronchi developed in the patient. Usage of activators of what membrane cytoceptors is physiologically valid to decrease attack?

- A.*β-adrenoreceptors**
- B.α-adrenoreceptors
- C.α- ta β-adrenoreceptors
- D.H-cholinoreceptors
- E.M-cholinoreceptors

27. If a man has an attack of bronchiospasm it is necessary to reduce the effect of vagus on smooth mu of bronchi. What membrane cytoceptors should be blocked for this purpose?

- A. *M- cholinoreceptors**

- B. α -adrenoreceptors
- C. α -adrenoreceptors
- D. N- cholinoreceptors
- E. α - and β - adrenoreceptors